Associate Editor Decision: Publish subject to minor revisions (review by editor) (07 Jun 2021) by Christine Klaas Comments to the Author (pdf):bg-2020-271-comments-to-author.pdf

Comments to the Author:Dear authors, the revised version of the manuscript appropriately addressed comments from both reviewer with perhaps one exception:

Response to Editor

Section 2.1: this section describes the study area in general terms (including a detailed description of waters masses). However, there is little information from and of relevance to the study here (i.e. the relevant info is revealed only piecewise in the discussion). It would help the reader if the available relevant information (also from other PEACETIME manuscript in the special issue) be reported/summarised here. This concerns in particular:1) Primary productivity and fluxes or particle load at the different stations before and during PEACETIME. 2) Significant atmospheric inputs and relevant elements at the different stations before and during PEACETIME.

Reply: we added further information related to PP and atmospheric inputs in session 2.1 which are relevant for discussion. We also referred to the works of van Wambecke and Bressac for further details. Session 2.1 has been revised.

And last but not least, for the discussion, how is the impact of deep winter convection in the western basin: were, when and how deep? Where does the POM come from: resuspended coastal sediments? Which area does this transport influence? Is there any info on particles in this layer? Finally, how does DOM affect the relation between Baxs and PHP in this particular study (i.e. DOM might not affect Baxs, but it would affect PHP).

Reply: the impact of deep winter convection on POM (and thus remineralization and subsequent Ba formation) is a conclusion/deduction from the present results and from previous works on Ba (Jacquet et al., 2016; Jullion et al., 2017) and from the fact that the western basin is a well known site of deep shelf and open ocean convection, transferring organic matter to deeper layers [Durrieu de Madron et al., 2013; Stabholz et al., 2013]. But we have no direct info on particles in this layer during the Peacetime cruise. We only dispose of upper POC fluxes that were similar at the 3 main stations at 200 m depth.

Minor comments and request for clarifications and some suggestion for improvement of the text are given in the annotated manuscript. I would urge the authors to use the same tense throughout (use either past to present tense to describe PEACETIME results) as well as the same abbreviations in text as in figures (see annotated manuscript).

Reply: thank you for all the comments and corrections made in the manuscript. We integrated them in our revised version. The same tense (past) is now used and we checked all abbreviations.